VOLUME 39 NUMBERS 1 AND 2, JANUARY AND FEBRUARY 2003

CONTENTS

REPORTS

Establishment and Characterization of a Continuous Cell Line from Pupal Ovaries of Japanese Oak Silkworm *Antheraea yamamai* Guerin-Meneville
Shigeo Imanishi, Hajime Inoue, Takeshi Kawarabata, Koyu Hara, Masako Funakoshi, Chisa Yasunaga-Aoki, and Kazuhiko Mitsuda 1
Enhancement of Osteoblast Proliferative Capacity by Growth Factor-like Molecules in Bear Serum
Michael Overstreet, Timothy Floyd, Anna Polotsky, David S. Hungerford, and Carmelita G. Frondoza 4
Effects of a Fat Body Extract on Larval Midgut Cells and Growth of Lepidoptera
Guy J. Smagghe, Kim Elsen, Marcia J. Loeb, Dale B. Gelman, and Michael Blackburn 8

CELL AND TISSUE MODELS

Maintenance of Liver Functions in Rat Hepatocytes Cultured as Spheroids in a Rotating Wall Vessel
Lanika A. Brown, Linda M. Arterburn, Ana P. Miller, Nancy L. Cowger, Sonya M. Hartley, Annette Andrews, Paul M. Silber, and Albert P. Li 13
Dilute Culture Media as an Environmental or Physiological Simulant in Cultured Gill Epithelia from Freshwater Rainbow Trout
Scott P. Kelly and Chris M. Wood 21
Characterization of a White Bass (*Morone chrysops*) Embryonic Cell Line with Epithelial Features
Chisato Shimizu, Hiroko Shike, Denise M. Malicki, Eric Breisch, Mark Westerman, John Buchanan, Heather R. Ligman, Ruth B. Phillips, James M. Carlberg, Jack Van Olst, and Jane C. Burns 29
Comparison of Antiproliferative Effects of Experimental and Established Antipsoriatic Drugs on Human Keratinocytes, Using a Simple 96-well-plate Assay
Arno Pol, Mieke Bergers, and Joost Schalkwijk 36
An Efficient, Nonenzymatic Method for Isolation and Culture of Murine Aortic Endothelial Cells and Their Response to Inflammatory Stimuli
Hong Huang, Jane McIntosh, and Dale G. Hoyt 43
Effects of Growth Surface on Differentiation of Cultures of Human Tracheal Epithelium
J. H. Widdicombe, L. A. Sachs, and W. E. Finkbeiner 51
Effects of Media on Differentiation of Cultured Human Tracheal Epithelium
L. A. Sachs, W. E. Finkbeiner, and J. H. Widdicombe 56
Evidence for the Isolation, Growth, and Characterization of Malignant Cells in Primary Cultures of Human Tumors
Robert L. Ochs, Jeffrey Fensterer, N. Paul Ohori, Alan Wells, Michael Gabrin, Lisa D. George, and Paul Kornblith 63
Proliferation and Differentiation of *Xenopus* A6 Cells Under Hypergravity as Revealed by Time-lapse Imaging
Mikihito Tanaka, Makoto Asashima, and Yoriko Atomi 71
Taste Receptor T1R3 is an Essential Molecule for the Cellular Recognition of the Disaccharide Trehalose
Toshio Ariyasu, Shuji Matsumoto, Fumiyo Kyono, Toshiharu Hanaya, Shigeyuki Arai, Masao Ikeda, and Masashi Kurimoto ... 80

CELL GROWTH/DIFFERENTIATION/APOPTOSIS

Cell Differentiation and $p38^{MAPK}$ Cascade are Inhibited in Human Osteoblasts Cultured in a Three-dimensional Clinostat
Louis Yuge, Izumi Hide, Takanori Kumagai, Yasuhiro Kumei, Sin'Ichi Takeda, Masamoto Kanno, Masanori Sugiyama, and Katsuko Kataoka 89

TOXICOLOGY/CHEMICAL CARCINOGENESIS

Homocysteine Oxidation and Apoptosis: A Potential Cause of Cleft Palate
Lynda Knott, Tom Hartridge, Nathan L. Brown, Jason P. Mansell, and Jonathon R. Sandy 98

VOLUME 39 NUMBERS 3 AND 4, MARCH AND APRIL 2003

CONTENTS

SPECIAL: SIVB CONGRESS PROCEEDING

Opening Remarks, SIVB 2001 Congress: Opportunities and Challenges in Plant Biotechnology
Christopher Bond 107

REPORTS

Establishment and Characterization of a New Epithelial Cell Line, KC-1, from Koala (*Phascolarctos cinereus*) Conjunctiva
Adeeb A. Girjes, Kristen E. Lee, and Frank N. Carrick 110
Continuous Cell Lines from the Common White, *Pieris rapae crucivora* Boisduval
Jun Mitsuhashi, Shouji Hayasaka, and Shigeo Imanishi 114
Methionine Cytotoxicity in the Human Breast Cancer Cell Line MCF-7
Hyung H. Kim and Chung S. Park 117

Magnetic Field Effects on Assembly Pattern of Smooth Muscle Cells
Masakazu Iwasaka, Junji Miyakoshi, and Shoogo Ueno 120

ARTICLES

BIOTECHNOLOGY

Molecular Detection of Cell Line Cross-contaminations Using Amplified Fragment Length Polymorphism DNA Fingerprinting Technology
E. Milanesi, P. Ajmone-Marsan, E. Bignotti, M. N. Losio, J. Bernardi, F. Chegdani, M. Soncini, and M. Ferrari 124

CELL AND TISSUE MODELS

Isolation and Culture of the Three Vascular Cell Types from a Small Vein Biopsy Sample
Guillaume Grenier, Murielle Rémy-Zolghadri, Rina Guignard, François Bergeron, Raymond Labbé, François A. Auger, and Lucie Germain 131
Isolation of Murine Aortic Endothelial Cells in Culture and the Effects of Sex Steroids on their Growth
David W. Lincoln II, Ann M. Larsen, Patricia G. Phillips, and Kathleen Bove 140
Characterization of Newly Established Clonal Oviductal Cell Lines and Differential Hormonal Regulation of Gene Expression
Tomohiro Umezu, Makoto Hanazono, Shinichi Aizawa, and Yasuhiro Tomooka 146

CELL GROWTH/DIFFERENTIATION/APOPTOSIS

Matrix Synthesis by Bladder Smooth Muscle Cells is Modulated by Stretch Frequency
Douglas E. Coplen, Edward J. Macarak, and Pamela S. Howard 157
Enhanced Myogenic Differentiation by Extracellular Matrix is Regulated at the Early Stages of Myogenesis
Ramon C. J. Langen, Annemie M. W. J. Schols, Marco C. J. M. Kelders, Emiel F. M. Wouters, and Yvonne M. W. Janssen-Heininger 163
Characterization of Rat Parotid and Submandibular Acinar Cell Apoptosis in Primary Culture
Kirsten H. Limesand, Katherine A. Barzen, Linda A. Sanders, Robert A. Sclafani, Mary V. Raynolds, Mary E. Reyland, Steven M. Anderson, and David O. Quissell 170

CYTOKINES/GROWTH FACTORS/ADHESION FACTORS

Differential Effects of Cellular Fibronectin and Plasma Fibronectin on Ovarian Cancer Cell Adhesion, Migration, and Invasion
Ladan Zand, Qiang Feng, Calvin D. Roskelley, Peter C. K. Leung, and Nelly Auersperg 178
Transforming Growth Factor–β1 Enhances the Secretion of Monocyte Chemoattractant Protein-1 by the IEC-18 Intestinal Epithelial Cell Line
Lisa B. Matagrano, Jason A. Magida, and Dennis W. McGee 183

VOLUME 39 NUMBERS 5 AND 6, MAY AND JUNE 2003

CONTENTS

REVIEW

Progress in Concept and Practice of Growing Anchorage-dependent Mammalian Cells in Three Dimension
Catherine Rappaport 187

REPORTS

Characterization of Porcine Stable Kidney Cell Line Adapted to Hyperthermic Temperature
Smita Paranjape, B. R. Patil, and V. D. Kadam 193
Regulation of the Proportion of Insulin Cells in Embryonic Chick Pancreas: Effect of a Growth Factor–reduced Extracellular Matrix in Combination with Retinoic Acid
Beverley Kramer and Clem Penny 196
The Absence of Prostaglandin E1 Returned Confluent Cultures of Highly Proliferative Murine Polycystic Kidney Principal Cells to a Normal Proliferation Level
Stephanie A. Orellana and Andrea M. Quiñones 199
A Novel In Vitro Dermal Wound-healing Model Incorporating a Response to Mechanical Wounding and Repopulation of a Fibrin Provisional Matrix
R. O'Leary and E. J. Wood 204
Ovarian Primary Tissue Culture of the Kuruma Shrimp *Marsupenaeus japonicus*
Minoru Maeda, Eiichi Mizuki, Toshiaki Itami, and Michio Ohba 208

ARTICLES

CELL AND TISSUE MODELS

Production of Tissue-engineered Three-dimensional Human Bronchial Models
J. S. Paquette, P. Tremblay, V. Bernier, F. A. Auger, M. Laviolette, L. Germain, M. Boutet, L. P. Boulet, and F. Goulet 213

Expression of Secreted Frizzled-related Protein 2 in a Primary Canine Mammary Tumor Cell Line: A Candidate Tumor Marker for Mammary Tumor Cells
Jia-Lin Lee, Ching-Jin Chang, Ling-Ling Chueh, and Chung-Tien Lin 221
Collagen Microcarrier Spinner Culture Promotes Osteoblast Proliferation and Synthesis of Matrix Proteins
Michael Overstreet, Afshin Sohrabi, Anna Polotsky, David S. Hungerford, and Carmelita G. Frondoza 228

CELL GROWTH/DIFFERENTIATION/APOPTOSIS

Optimization of NB-4 and HL-60 Differentiation for Use in Opsonophagocytosis Assays
Roland A. Fleck, Harpinder Athwal, Jane A. Bygraves, David J. Hockley, Ian M. Feavers, and Glyn N. Stacey 235
NaF Induces Early Differentiation of Murine Bone Marrow Cells Along the Granulocytic Pathway But Not the Monocytic or Preosteoclastic Pathway In Vitro
Akira Oguro, Tomoyuki Kawase, and Michiaki Orikasa 243
In Vitro Development and Characterization of a Manatee Bronchial Cell Line
James M. Sweat, Calvin M. Johnson, and E. Paul J. Gibbs 249

SIGNAL TRANSDUCTION

Divergence of Epidermal Growth Factor–transforming Growth Factorβ Signaling in Embryonic Orofacial Tissue
Vasker Bhattacherjee, Robert M. Greene, and M. Michele Pisano 257

2003 Congress Special Poster Session Abstracts 262

VOLUME 39 NUMBER 7, JULY/AUGUST 2003

CONTENTS
REPORTS

Recombinant Perchloric Acid-soluble Protein Suppresses the Immunoglobulin Production of Human-human Hybridoma HB4C5 Cells
Hiroaki Kanouchi, Aya Matsuo, Tatsuzo Oka, Hirofumi Tachibana, and Koji Yamada 263
Polarized Cultures of Human Airway Epithelium from Nasal Scrapings and Bronchial Brushings
Nilceia Lopez-Souza, Pedro C. Avila, and Jonathan H. Widdicombe 266
Pathogenicity of *Choristoneura fumiferana* Nucleopolyhedrovirus Propagated In Vitro at Different Incubation Temperatures
Peter M. Ebling, Guido F. Caputo, and Barbara J. Cook 270
Analysis of Three Variable Number Terminal Repeat Loci is Sufficient to Characterize the Deoxyribonucleic Acid Fingerprints of a Panel of Human Tumor Cell Lines
Allyson L. Anding, Tanika Reiss, and Glen S. Germain 273
The Effect of Human Immunodeficiency Virus-1 Protease Inhibitors on the Toxicity of a Variety of Cells
Ralph J. Germinario and Susan P. Colby-Germinario 275
The Effect of Hydroxyurea on the Phosphorylation of Zidovudine and Lamivudine in Human Umbilical Vein Endothelial Cells
Timothy R. McGuire, Eric B. Hoie, Konstantine K. Manouilov, and Peter G. Gwilt 280
Cryopreserved Human Hepatocytes as Alternative In Vitro Model for Cytochrome P450 Induction Studies
Martha Garcia, Joseph Rager, Qing Wang, Robert Strab, Ismael J. Hildago, Albert Owen, and Jibin Li 283
Cloning of a Cancer Cell-producing Hepatocyte Growth Factor, Vascular Endothelial Growth Factor, and Interleukin-8 from Gastric Cancer Cells
Mineko Iwai, Masahiko Matsuda, and Yoshiaki Iwai 288
Fortification of a Protein-free Cell Culture Medium with Plant Peptones Improves Cultivation and Productivity of an Interferon-γ-producing CHO Cell Line
Caroline C. Burteau, Françis R. Verhoeye, Johann F. Mols, Jean-Sébastien Ballez, Spiros N. Agathos, and Yves-Jaques Schneider 291

ARTICLES

CELL AND TISSUE MODELS

Collagen Gel Contraction Serves to Rapidly Distinguish Epithelial- and Mesenchymal-derived Cells Irrespective of α-smooth Muscle Actin Expression
Helga Lind Nielsen, Thorarinn Gudjonsson, René Villadsen, Lone Rønnov-Jessen, and Ole William Petersen 297
Conditionally Immortal Ovarian Cell Lines for Investigating the Influence of Ovarian Stroma on the Estrogen Sensitivity and Tumorigenicity of Ovarian Surface Epithelial Cells
Feng Jiang, Beatriz O. Saunders, Edward Haller, Sandra Livingston, Santo V. Nicosia, and Wenlong Bai 304
Culture of Murine Brain Microvascular Endothelial Cells That Maintain Expression and Cytoskeletal Association of Tight Junction-associated Proteins
Li Song and Joel S. Pachter 313

SIGNAL TRANSDUCTION

Expression of Fibroblast Growth Factor Receptor Genes in Human Hepatoma-derived Cell Lines
Nobuyuki Asada, Yoshiharu Tanaka, Yasutaka Hayashido, Shigeaki Toratani, Mikio Kan, Mikiya Kitamoto, Toshio Nakanishi, Goro Kajiyama, Kazuaki Chayama, and Tetsuji Okamoto 321

TOXICOLOGY/CHEMICAL CARCINOGENESIS

Ergovaline Toxicity of Caco-2 Cells as Assessed by MTT, Alamarblue, and DNA Assays
Nancy W. Shappell 329

VOLUME 38 NUMBERS 8 AND 9, SEPTEMBER AND OCTOBER 2003

CONTENTS
REPORTS

Phenotypic Characterization of a Human Synovial Sarcoma Cell Line, SW982, and Its Response to Dexamethasone
Taisuke Yamazaki, Takashi Yokoyama, Hiromi Akatsu, Takashi Takiyama, and Takayoshi Tokiwa 337
Differential Sensitivity to Short-chain Ceramide Analogues of Human Intestinal Carcinoma Cells Grown in Tumor Spheroids Versus Monolayer Culture
Erica L. Lowthers, Cynthia L. Richard, and Jonathan Blay 340

ARTICLES

BIOTECHNOLOGY

Single-nucleotide polymorphism of the Urokinase-plasminogen Activator Gene During Aging and Transformation of Human Diploid Kidney Cell Cultures
Safedin H. Beqaj, David Post, and Jon M. Ryan 343

CELL AND TISSUE MODELS

Static Magnetic Field with a Strong Magnetic Field Gradient (41.7 T/m) Induces c-Jun Expression in HL-60 Cells
Hideki Hirose, Takehisa Nakahara, Qiu-Mei Zhang, Shuji Yonei, and Junji Miyakoshi 348
Application of Inter-simple Sequence Repeats to Insect Cell Lines: Identification at the Clonal and Tissue-specific Level
James J. Grasela and Arthur H. McIntosh 353
Reconstruction of Tubular Structures in Three-dimensional Collagen Gel Culture Using Proximal Tubular Epithelial Cells Voided in Human Urine
Chiyoko N. Inoue, Norio Sunagawa, Tetsuji Morimoto, Shoko Ohnuma, Fumio Katsushima, Toshiyuki Nishio, Yoshiaki Kondo, and Kazuie Iinuma 364
In Situ Collagen Gelation: A New Method for Constructing Large Tissue in Rotary Culture Vessels
George Nan-Chang Su, Miyoko Hidaka, Yusuke Kimura, and Gaku Yamamoto 368

CELL GROWTH/DIFFERENTIATION/APOPTOSIS

Isomers of Conjugated Linoleic Acid Modulate Human Preadipocyte Differentiation
Ronald L. McNeel, E. O'Brian Smith, and Harry J. Mersmann 375

CYTOKINES/GROWTH FACTORS/ADHESION FACTORS

Estrogenic Compounds Suppressed Interferon-Gamma Production in Mouse Splenocytes Through Direct Cell-cell Interaction
Mako Nakaya, Masao Yamasaki, Yoshiyuki Miyazaki, Hirofumi Tachibana, and Koji Yamada 383
Bovine Pituitary Extract Provides Remarkable Protection Against Oxidative Stress in Human Prostate Epithelial Cells
Kyle D. Kent and Joshua A. Bomser 388

TOXICOLOGY/CHEMICAL CARCINOGENESIS

Antagonistic Effects of Simultaneous Exposure of Ergot Alkaloids on Kidney Adenosine Triphosphatase System
Ali S. Moubarak, Zelpha B. Johnson, and Charles F. Rosenkrans, Jr. 395

VOLUME 39 NUMBER 10, NOVEMBER/DECEMBER 2003

CONTENTS
REPORTS

A Continuous Cell Line from the Cupreous Chafer, *Anomala cuprea* Hope (Insecta, Coleoptera, Scarabaeidae)
Jun Mitsuhashi 399

A Stepwise Method for the Isolation of Endothelial Cells and Smooth Muscle Cells from Individual Canine Coronary Arteries
Michael K. Dame, Xinwen Yu, Rosario Garrido, Walter Bobrowski, J. Eric McDuffie, Hedwig S. Murphy, Mudher Albassam, and James Varani 402

ARTICLES

BIOTECHNOLOGY

A Novel Cell-based System for Evaluating Skeletal Muscle Cell Hypertrophy–inducing Agents
Doreen Cross-Doersen and Robert J. Isfort 407
Flow Cytometric Evaluation of Leukocyte Function in Rat Whole Blood
Wen Li and S. C. Syndey Chung 413
Differential Expression of Mammalian or Viral Promoter–driven Gene in Adherent Versus Suspension Cells
Gong Feng, Patricia Hicks, and Pi-Ling Chang 420
Identification and Authentication of Animal Cell Culture by Polymerase Chain Reaction Amplification and DNA Sequencing
Merry Y. Liu, She-Ching Lin, Hsi Liu, Francisco Candal, and Abbas Vafai 424

CELL AND TISSUE MODELS

Extracellular Matrix Induces Formation of Organoids and Changes in Cell Surface Morphology in Cultured Human Breast Carcinoma Cells PMC42-LA
M. Leigh Ackland, John Ward, Christopher M. Ackland, Mark Greaves, and Mary Walker 428
Glucose Transporter Content and Glucose Uptake in Skeletal Muscle Constructs Engineered In Vitro
Erin L. Baker, Robert G. Dennis, and Lisa M. Larkin 434
Establishment of Hepatic Stem-like Cell Lines from Normal Adult Porcine Liver in a Poly-D-lysine–coated Dish with Nair-1 Medium
Junko Kano, Tadashi Ishiyama, Naoko Nakamura, Tatsuo Iijima, Yukio Morishita, and Masayuki Noguchi 440

CELL GROWTH/DIFFERENTIATION/APOPTOSIS

Pluripotent Differentiation In Vitro of Murine ES-D3 Embryonic Stem Cells
Arazdordi Toumadje, Ken-Ichi Kusumoto, Angela Parton, Patricia Mericko, Lori Dowell, Guozhong Ma, Luping Chen, David W. Barnes, and J. Denry Sato 449
Osteoblasts Subjected to Spaceflight and Simulated Space Shuttle Launch Conditions
Melissa A. Kacena, Paul Todd, and William J. Landis 454

SIGNAL TRANSDUCTION

Protein Kinase C Inhibits Formation of VA Gene Transcription Initiation Complex
Timothy E. Shannon and Calvin B. L. James 460

PRODUCT APPLICATIONS

A Simple Method Using β-globin Polymerase Chain Reaction for the Species Identification of Animal Cell Lines—A Progress Report
Klaus G. Steube, Corinna Meyer, Cord C. Uphoff, and Hans G. Drexler 468

BOOK REVIEW

Cancer Cell Culture—Methods and Protocols
Reviewed by Fen Wang 476